

109TH CONGRESS  
2D SESSION

# S. 3483

To improve national competitiveness through enhanced education initiatives.

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IN THE SENATE OF THE UNITED STATES

JUNE 8, 2006

Mr. ENSIGN (for himself and Mr. LIEBERMAN) introduced the following bill;  
which was read twice and referred to the Committee on Health, Edu-  
cation, Labor, and Pensions

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## A BILL

To improve national competitiveness through enhanced  
education initiatives.

1       *Be it enacted by the Senate and House of Representa-*  
2       *tives of the United States of America in Congress assembled,*

3       **SECTION 1. SHORT TITLE.**

4       This Act may be cited as the “National Innovation  
5       Education Act”.

6       **SEC. 2. TABLE OF CONTENTS.**

7       The table of contents for this Act is as follows:

Sec. 1. Short title.

Sec. 2. Table of contents.

TITLE I—IMPROVING PREKINDERGARTEN THROUGH GRADE 16  
EDUCATION

Sec. 101. Short title.

- Sec. 102. Purposes.
- Sec. 103. Definitions.
- Sec. 104. P-16 education stewardship system grants.
- Sec. 105. State application and plan.
- Sec. 106. P-16 education stewardship commission.
- Sec. 107. P-16 education data system.
- Sec. 108. Reports; technical assistance.
- Sec. 109. Authorization of appropriations.

## TITLE II—NATIONAL SCIENCE FOUNDATION MAGNET SCHOOLS AND INNOVATION-BASED LEARNING

- Sec. 201. General definitions.
- Sec. 202. Magnet schools.
- Sec. 203. Innovation-based experiential learning.

## TITLE III—TEACHER TRAINING AND PROFESSIONAL DEVELOPMENT

- Sec. 301 Baccalaureate degrees in mathematics and science with teacher certification.
- Sec. 302. Teachers professional development institutes.

## TITLE IV—STEM EDUCATION AND RESEARCH

- Sec. 401. Definitions.
- Sec. 402. Graduate fellowships and graduate traineeships.
- Sec. 403. Professional science master's degree programs.
- Sec. 404. Increased support for science education through the National Science Foundation.
- Sec. 405. A national commitment to basic research.
- Sec. 406. Study on service science.

# 1 **TITLE I—IMPROVING PRE-** 2 **KINDERGARTEN THROUGH** 3 **GRADE 16 EDUCATION**

## 4 **SEC. 101. SHORT TITLE.**

5 This title may be cited as the “College Pathway Act  
6 of 2006”.

## 7 **SEC. 102. PURPOSES.**

8 The purposes of this title are the following:

- 9 (1) To broaden the focus of Federal, State, and  
10 local higher education programs to promote aca-  
11 demic success in postsecondary education, particu-

1 larly with respect to mathematics, science, engineer-  
 2 ing, and technology.

3 (2) To increase the percentage of low-income  
 4 and minority students who are academically pre-  
 5 pared to enter and successfully complete postsec-  
 6 ondary-level general education coursework.

7 (3) To decrease the percentage of students re-  
 8 quiring developmental coursework through grants  
 9 that enable States to coordinate the public pre-  
 10 kindergarten through grade 12 education system  
 11 and the postsecondary education system—

12 (A) to ensure that covered institutions ar-  
 13 ticulate and publicize the prerequisite skills and  
 14 knowledge expected of incoming postsecondary  
 15 students attending covered institutions, in order  
 16 to provide students and other interested parties  
 17 with accurate information pertaining to the stu-  
 18 dents' necessary preparations for postsecondary  
 19 education;

20 (B) to establish and implement middle  
 21 school and secondary school course enrollment  
 22 guidelines while ensuring rigorous content  
 23 standards—

24 (i) to ensure that public secondary  
 25 school students, in all major racial and

1 ethnic groups, and income levels, complete  
 2 academic courses linked with academic suc-  
 3 cess in mathematics, science, engineering,  
 4 and technology at the postsecondary level;  
 5 and

6 (ii) to increase the percentage of stu-  
 7 dents in each major racial group, ethnic  
 8 group, and income level who graduate from  
 9 secondary school and enter postsecondary  
 10 education with the academic preparation  
 11 necessary to successfully complete postsec-  
 12 ondary-level general education coursework,  
 13 particularly with respect to mathematics,  
 14 science, engineering, and technology;

15 (C) to implement programs and policies  
 16 that increase secondary school graduation rates  
 17 while ensuring rigorous content standards; and

18 (D) to collect and analyze disaggregated  
 19 longitudinal student data throughout P–16 edu-  
 20 cation in order to—

21 (i) understand and improve students’  
 22 progress throughout P–16 education;

23 (ii) understand problems and needs  
 24 throughout P–16 education; and

1 (iii) align prekindergarten through  
 2 grade 12 academic standards and higher  
 3 education standards so that more students  
 4 are prepared to successfully complete post-  
 5 secondary-level general education  
 6 coursework.

7 **SEC. 103. DEFINITIONS.**

8 In this title:

9 (1) IN GENERAL.—The terms “local educational  
 10 agency”, “parent”, “secondary school”, and “State”  
 11 have the meanings given the terms in section 9101  
 12 of the Elementary and Secondary Education Act of  
 13 1965 (20 U.S.C. 7801).

14 (2) ACADEMIC ASSESSMENTS.—The term “aca-  
 15 demic assessments” means the academic assess-  
 16 ments implemented by a State educational agency  
 17 pursuant to section 1111(b)(3) of the Elementary  
 18 and Secondary Education Act of 1965 (20 U.S.C.  
 19 6311(b)(3)).

20 (3) ACADEMIC STANDARDS.—The term “aca-  
 21 demic standards” means the challenging academic  
 22 content standards and challenging student academic  
 23 achievement standards adopted by a State pursuant  
 24 to section 1111(b)(1) of the Elementary and Sec-

1       ondary Education Act of 1965 (20 U.S.C.  
2       6311(b)(1)).

3           (4) COVERED INSTITUTION.—The term “cov-  
4       ered institution” means an institution of higher edu-  
5       cation that participates in a program under title IV  
6       of the Higher Education Act of 1965 (20 U.S.C.  
7       1070 et seq.).

8           (5) DEVELOPMENTAL COURSEWORK.—The  
9       term “developmental coursework” means coursework  
10      that a student is required to complete in order to at-  
11      tain prerequisite knowledge or skills necessary for  
12      entrance into a postsecondary degree or certification  
13      program.

14          (6) INSTITUTION OF HIGHER EDUCATION.—The  
15      term “institution of higher education” has the  
16      meaning given the term in section 102 of the Higher  
17      Education Act of 1965 (20 U.S.C. 1002).

18          (7) P–16 EDUCATION.—The term “P–16 edu-  
19      cation” means the educational system from pre-  
20      kindergarten through the conferring of a bacca-  
21      laureate degree.

22          (8) P–16 EDUCATOR.—The term “P–16 educa-  
23      tor” means an individual teaching in P–16 edu-  
24      cation.

1           (9) SECRETARY.—The term “Secretary” means  
2           the Secretary of Education.

3           (10) STUDENT.—The term “student” means  
4           any student enrolled in a public school.

5   **SEC. 104. P-16 EDUCATION STEWARDSHIP SYSTEM GRANTS.**

6           (a) PROGRAM AUTHORIZED.—From amounts appro-  
7           priated under section 109 for a fiscal year, and subject  
8           to subsection (b), the Secretary shall award grants, on a  
9           competitive basis, to States to enable the States—

10           (1) to establish—

11                   (A) P-16 education stewardship commis-  
12                   sions in accordance with section 106; or

13                   (B) P-16 education stewardship systems  
14                   consisting of—

15                           (i) a P-16 education stewardship  
16                           commission in accordance with section  
17                           106; and

18                           (ii) a P-16 education data system in  
19                           accordance with section 107; and

20           (2) to carry out the activities and programs de-  
21           scribed in the State application and plan submitted  
22           under section 105.

23           (b) AWARD BASIS.—In determining the approval and  
24           amount of a grant under subsection (a), the Secretary  
25           shall give priority to an application from a State that de-

1 sires the grant to establish a P–16 education stewardship  
 2 system described in subsection (a)(1)(B).

3 (c) PERIOD OF GRANTS.—

4 (1) STATES ESTABLISHING P–16 EDUCATION  
 5 STEWARDSHIP SYSTEMS.—Each grant made under  
 6 this section to a State to establish a P–16 education  
 7 stewardship system described in subsection (a)(1)(B)  
 8 shall be awarded for a period of 5 years.

9 (2) STATES ESTABLISHING P–16 EDUCATION  
 10 STEWARDSHIP COMMISSIONS.—Each grant made  
 11 under this section to a State to establish a P–16  
 12 education stewardship commission described in sub-  
 13 section (a)(1)(A) shall be awarded for a period of 3  
 14 years.

15 **SEC. 105. STATE APPLICATION AND PLAN.**

16 (a) IN GENERAL.—A State desiring a grant under  
 17 section 104 shall submit an application to the Secretary  
 18 at such time, in such manner, and containing such infor-  
 19 mation as the Secretary may reasonably require.

20 (b) CONTENTS.—Each application submitted under  
 21 this section shall include, at a minimum, the following:

22 (1) A demonstration that the State, not later  
 23 than 5 months after receiving grant funds under this  
 24 title, will establish a P–16 education stewardship  
 25 commission described in section 106.



1           (2) For a state applying for a grant under sec-  
2           tion 104(a)(1)(B), a demonstration that the State,  
3           not later than 2 years after receiving grant funds  
4           under this title, will implement, expand, or improve  
5           a P–16 education data system described in section  
6           107.

7           (3) A demonstration that the State will work  
8           with the State P–16 education stewardship commis-  
9           sion and others as necessary to examine the relation-  
10          ship among the content of postsecondary education  
11          admission and placement exams, the prerequisite  
12          skills and knowledge required to successfully take  
13          postsecondary-level general education coursework,  
14          the prekindergarten through grade 12 courses and  
15          academic factors associated with academic success at  
16          the postsecondary level, particularly with respect to  
17          mathematics, science, engineering, and technology,  
18          and existing academic standards and aligned aca-  
19          demic assessments.

20          (4) A description of how the State will, using  
21          the information from the State P–16 education  
22          stewardship commission, increase the percentage of  
23          students taking courses that have the highest cor-  
24          relation of academic success at the postsecondary  
25          level, for each of the following groups of students:

1 (A) Economically disadvantaged students.

2 (B) Students from each major racial and  
3 ethnic group.

4 (C) Students with disabilities.

5 (D) Students with limited English pro-  
6 ficiency.

7 (5) A description of how the State will dis-  
8 tribute the information in the P–16 education stew-  
9 ardship commission’s report under section 106(c)(4)  
10 to the public in the State, including public secondary  
11 schools, local educational agencies, school counselors,  
12 P–16 educators, institutions of higher education,  
13 students, and parents.

14 (6) An assurance that the State will continue to  
15 pursue effective P–16 education alignment strategies  
16 after the end of the grant period.

17 **SEC. 106. P–16 EDUCATION STEWARDSHIP COMMISSION.**

18 (a) P–16 EDUCATION STEWARDSHIP COMMISSION.—

19 (1) IN GENERAL.—Each State receiving a grant  
20 under section 104 shall establish a P–16 education  
21 stewardship commission that has the policymaking  
22 ability to meet the requirements of this section.

23 (2) EXISTING COMMISSION.—The State may  
24 designate an existing coordinating body or commis-  
25 sion as the State P–16 education stewardship com-

mission for purposes of this title, if the body or commission meets, or is amended to meet, the basic requirements of this section.

(b) MEMBERSHIP.—

(1) COMPOSITION.—Each P-16 education stewardship commission shall be composed of the Governor of the State, or the designee of the Governor, and the stakeholders of the statewide education community, as determined by the Governor or the designee of the Governor, such as—

(A) the chief State official responsible for administering prekindergarten through grade 12 education in the State;

(B) the chief State official of the entity primarily responsible for the supervision of institutions of higher education in the State;

(C) bipartisan representation from the State legislative committee with jurisdiction over prekindergarten through grade 12 education and higher education;

(D) representatives of 2- and 4-year institutions of higher education in the State;

(E) representatives of the business community; and

1 (F) at the discretion of the Governor, or  
 2 the designee of the Governor, representatives  
 3 from prekindergarten through grade 12 and  
 4 higher education governing boards and other  
 5 organizations.

6 (2) CHAIRPERSON; MEETINGS.—The Governor  
 7 of the State, or the designee of the Governor, shall  
 8 serve as chairperson of the P–16 education steward-  
 9 ship commission and shall convene regular meetings  
 10 of the commission.

11 (c) DUTIES OF THE COMMISSION.—

12 (1) MEETINGS OF COVERED INSTITUTIONS.—

13 (A) IN GENERAL.—Each State P–16 edu-  
 14 cation stewardship commission shall convene  
 15 regular meetings of the covered institutions in  
 16 the State for the purpose of assessing and  
 17 reaching consensus regarding—

18 (i) the prerequisite skills and knowl-  
 19 edge expected of incoming freshmen to suc-  
 20 cessfully engage in and complete postsec-  
 21 ondary-level general education coursework  
 22 without the prior need to enroll in develop-  
 23 mental coursework; and

24 (ii) patterns of coursework and other  
 25 academic factors that demonstrate the

1 highest correlation with success in com-  
2 pleting postsecondary-level general edu-  
3 cation coursework and degree or certifi-  
4 cation programs, particularly with respect  
5 to mathematics, science, engineering, and  
6 technology.

7 (B) FINDINGS OF COVERED INSTITU-  
8 TIONS.—The covered institutions shall commu-  
9 nicate to the P–16 education stewardship com-  
10 mission the findings of the covered institutions,  
11 which—

12 (i) shall include the consensus on the  
13 prerequisite skills and knowledge, patterns  
14 of coursework, and other academic factors  
15 described in subparagraph (A);

16 (ii) shall address, at minimum, the  
17 subjects of reading or language arts, his-  
18 tory, mathematics, science, technology, and  
19 engineering, and may cover additional aca-  
20 demic content areas;

21 (iii) shall be descriptive of content and  
22 purpose, and shall not be limited to a sim-  
23 ple listing of secondary course names; and

24 (iv) may be different for 2- and 4-year  
25 institutions of higher education.

1           (2) COMMISSION RECOMMENDATIONS.—Not  
 2 later than 18 months after a State receives a grant  
 3 under section 104, and annually thereafter for each  
 4 year in the grant period, the State P–16 education  
 5 stewardship commission shall—

6           (A) develop recommendations regarding  
 7 the prerequisite skills and knowledge, patterns  
 8 of coursework, and other academic factors de-  
 9 scribed in paragraph (1)(A); and

10          (B) develop recommendations and enact  
 11 policies to increase the success rate of students  
 12 in the students’ transition from secondary  
 13 school to postsecondary education, including  
 14 policies to increase success rates for—

15           (i) students of economic disadvantage;

16           (ii) students of racial and ethnic mi-  
 17 norities;

18           (iii) students with disabilities; and

19           (iv) students with limited English pro-  
 20 ficiency.

21          (3) COMMISSION FINDINGS.—Not later than 3  
 22 years after a State receives a grant under section  
 23 104(a)(1)(B), the State P–16 education stewardship  
 24 commission shall—

1 (A) compile and interpret the findings  
2 from the P-16 education data system; and

3 (B) include the compilation and interpreta-  
4 tion of the findings in the report described in  
5 paragraph (4)(A).

6 (4) REPORTS.—

7 (A) IN GENERAL.—Not later than 18  
8 months after a State receives a grant under  
9 section 104, and annually thereafter for each  
10 year in the grant period, the State P-16 edu-  
11 cation stewardship commission shall prepare  
12 and submit to the Secretary a clear and concise  
13 report that shall include the recommendations  
14 described in subparagraphs (A) and (B) of  
15 paragraph (2).

16 (B) DISTRIBUTION TO THE PUBLIC.—Not  
17 later than 60 days after the submission of a re-  
18 port under subparagraph (A), each State P-16  
19 education stewardship commission shall publish  
20 and widely distribute the information in the re-  
21 port to the public in the State, including—

- 22 (i) all public secondary schools and  
23 local educational agencies;  
24 (ii) school counselors;  
25 (iii) P-16 educators;

- 1 (iv) institutions of higher education;  
2 and  
3 (v) students and parents, especially  
4 students and parents of students listed in  
5 clauses (i) through (iv) of paragraph  
6 (2)(B) and those entering grade 9 in the  
7 next academic year, to assist students and  
8 parents in making informed and strategic  
9 course enrollment decisions.

10 **SEC. 107. P-16 EDUCATION DATA SYSTEM.**

11 (a) ESTABLISHMENT.—Not later than 2 years after  
12 a State receives a grant under section 104(a)(1)(B), the  
13 State shall establish a Statewide longitudinal data system  
14 that provides each student, upon enrollment in a public  
15 school or in a covered institution in the State, with a  
16 unique identifier that is retained throughout the student's  
17 enrollment in P-16 education in the State.

18 (b) VALID DATA AND COMPLIANCE WITH FERPA.—  
19 The State, through the implementation of the data system  
20 described in subsection (a), shall—

- 21 (1) ensure the implementation and use of valid  
22 and reliable secondary school dropout data; and  
23 (2) ensure that the data system is compliant  
24 with the Family Educational Rights and Privacy Act  
25 of 1974 (20 U.S.C. 1232g).



1 (c) REQUIRED ELEMENTS OF A STATEWIDE DATA  
 2 SYSTEM.—The State shall ensure that the data system de-  
 3 scribed in subsection (a) includes the following elements:

4 (1) A unique statewide student identifier.

5 (2) Student-level enrollment, demographic, and  
 6 program participation information.

7 (3) Individual students' yearly test records.

8 (4) Information on students not tested by grade  
 9 and subject.

10 (5) A teacher identifier system with the ability  
 11 to match teachers to students.

12 (6) Student-level transcript information, includ-  
 13 ing information on courses completed and grades  
 14 earned.

15 (7) Student-level college readiness test scores.

16 (8) Student-level information about the points  
 17 at which students exit, transfer in, transfer out,  
 18 drop out, or graduate P-16 education.

19 (9) The capacity to communicate with higher  
 20 education data systems.

21 (10) A State data audit system assessing data  
 22 quality, validity, and reliability.

23 (d) FUNCTIONS OF THE STATEWIDE DATA SYS-  
 24 TEM.—In implementing the data system described in sub-  
 25 section (a), the State shall—

1           (1) identify factors that correlate to students'  
 2           ability to successfully engage in and complete post-  
 3           secondary-level general education coursework with-  
 4           out the need for prior developmental coursework;

5           (2) identify factors to increase the percentage  
 6           of low-income and minority students who are aca-  
 7           demically prepared to enter and successfully com-  
 8           plete postsecondary-level general education  
 9           coursework; and

10          (3) use data to otherwise inform education pol-  
 11          icy and practice.

12          (e) EXISTING DATA SYSTEMS.—A State may employ,  
 13          coordinate, or revise an existing data system for purposes  
 14          of this section if such data system produces valid and reli-  
 15          able information that satisfies the requirements of sub-  
 16          sections (b) through (d).

17   **SEC. 108. REPORTS; TECHNICAL ASSISTANCE.**

18          (a) STATE REPORTS.—

19           (1) ANNUAL REPORT.—Each State that re-  
 20           ceives a grant under section 104 shall submit an an-  
 21           nual report to the Secretary for each year of the  
 22           grant period that shall include a description of the  
 23           activities undertaken under the grant to improve  
 24           academic readiness for postsecondary-level general  
 25           education coursework and course completion.

1           (2) DISSEMINATION.—Each State shall prepare  
 2           and widely disseminate the report described in para-  
 3           graph (1) to the public in the State, including sec-  
 4           ondary schools, local educational agencies, school  
 5           counselors, P–16 educators, institutions of higher  
 6           education, students, and parents.

7           (b) SECRETARY REPORTS.—

8           (1) ANNUAL REPORT.—The Secretary shall  
 9           submit an annual report to Congress that includes—

10                   (A) findings from the State reports sub-  
 11                   mitted under subsection (a)(1);

12                   (B) a description of the actions taken by  
 13                   the Department of Education to assist States  
 14                   with creating P–16 education stewardship com-  
 15                   missions and P–16 education data systems;

16                   (C) a description of the actions and incen-  
 17                   tives planned by the States’ P–16 education  
 18                   stewardship commissions—

19                           (i) to help States align academic  
 20                           standards, courses, and academic assess-  
 21                           ments with postsecondary academic expect-  
 22                           ations, courses, and assessments;

23                           (ii) to help States increase the per-  
 24                           centage of minority and low-income stu-

dents prepared to enter and succeed at the postsecondary level; and

(iii) to decrease postsecondary developmental coursework enrollment rates of minority and low-income students;

(D) a description of the actions and incentives planned to help States reduce postsecondary developmental coursework enrollment rates;

(E) an assessment of the effectiveness of P–16 education stewardship commissions in improving college readiness and eliminating the need for developmental coursework; and

(F) recommendations regarding how to make the P–16 education stewardship commissions more effective, and whether the establishment of such commissions should be encouraged throughout the United States.

(2) AVAILABILITY.—The Secretary shall make the annual report described in paragraph (1) available to the public and to each State and institution of higher education.

(c) TECHNICAL ASSISTANCE.—The Secretary shall provide, to the extent practicable, technical assistance to

1 States and institutions of higher education seeking tech-  
 2 nical assistance under this title.

3 **SEC. 109. AUTHORIZATION OF APPROPRIATIONS.**

4 There are authorized to be appropriated to carry out  
 5 this title \$55,000,000 for fiscal year 2007 and such sums  
 6 as may be necessary for each of fiscal years 2008 through  
 7 2011.

8 **TITLE II—NATIONAL SCIENCE**  
 9 **FOUNDATION MAGNET**  
 10 **SCHOOLS AND INNOVATION-**  
 11 **BASED LEARNING**

12 **SEC. 201. GENERAL DEFINITIONS.**

13 Except as otherwise provided, the terms used in this  
 14 title have the meanings given the terms in section 9101  
 15 of the Elementary and Secondary Education Act of 1965  
 16 (20 U.S.C. 7801).

17 **SEC. 202. MAGNET SCHOOLS.**

18 (a) PURPOSE.—The purpose of this section is to as-  
 19 sist in the promotion of innovation and competitiveness  
 20 by providing financial assistance to eligible local edu-  
 21 cational agencies for—

22 (1) the development and implementation of  
 23 magnet school programs that will assist eligible local  
 24 educational agencies in achieving systemic reforms  
 25 and providing all students the opportunity to meet

1       challenging State academic content standards and  
2       student academic achievement standards;

3           (2) the development and design of innovative  
4       educational methods, practices, and curriculum that  
5       promote student achievement in science, mathe-  
6       matics, and technology courses;

7           (3) improving the capacity of eligible local edu-  
8       cational agencies, including through professional de-  
9       velopment, to continue operating magnet schools  
10      after Federal funding for the magnet schools is ter-  
11      minated; and

12          (4) ensuring that students enrolled in such  
13      schools have access to a high quality education that  
14      will enable such students to succeed academically  
15      and enroll in postsecondary education at a high  
16      level.

17      (b) DEFINITIONS.—In this section:

18          (1) DIRECTOR.—The term “Director” means  
19      the Director of the National Science Foundation.

20          (2) ELIGIBLE LOCAL EDUCATIONAL AGENCY.—  
21      The term “eligible local educational agency” means  
22      a local educational agency described in section 5304  
23      of the Elementary and Secondary Education Act of  
24      1965 (20 U.S.C. 7231c).

1           (3) MAGNET SCHOOL.—The term “magnet  
2       school” means a public elementary school or public  
3       secondary school that—

4                   (A) offers a curriculum focused on science,  
5       mathematics, and technology; and

6                   (B) attracts a substantial number of stu-  
7       dents from different racial backgrounds.

8       (c) PROGRAM AUTHORIZED.—The Director, in ac-  
9       cordance with this section, is authorized to award grants  
10      to eligible local educational agencies, and consortia of such  
11      agencies where appropriate, to carry out the purpose of  
12      this section for magnet schools.

13      (d) APPLICATIONS AND REQUIREMENTS.—

14           (1) APPLICATIONS.—An eligible local edu-  
15      cational agency, or consortium of such agencies, de-  
16      siring to receive a grant under this section shall sub-  
17      mit an application to the Director at such time, in  
18      such manner, and containing such information and  
19      assurances as the Director may reasonably require.

20           (2) INFORMATION AND ASSURANCES.—Each  
21      application submitted under paragraph (1) shall in-  
22      clude—

23                   (A) a description of—

1 (i) how a grant awarded under this  
2 section will be used to promote instruction  
3 in science, mathematics, and technology;

4 (ii) the manner and extent to which  
5 the magnet school program will increase  
6 student academic achievement in the in-  
7 structional areas offered by the school;

8 (iii) how the applicant will continue  
9 the magnet school program after assist-  
10 ance under this section is no longer avail-  
11 able;

12 (iv) how grant funds under this sec-  
13 tion will be used—

14 (I) to improve student academic  
15 achievement for all students attending  
16 the magnet school programs; and

17 (II) to implement services and  
18 activities that are consistent with pro-  
19 grams under part A of title I of the  
20 Elementary and Secondary Education  
21 Act of 1965 (20 U.S.C. 6311 et seq.);  
22 and

23 (v) the criteria to be used in selecting  
24 students to attend the proposed magnet  
25 school program; and



1 (B) assurances that the applicant will—

2 (i) use grant funds under this section

3 for the purpose specified in subsection (a);

4 (ii) employ highly qualified teachers in

5 the courses of instruction assisted under

6 this section; and

7 (iii) carry out a high-quality education

8 program that will encourage greater paren-

9 tal involvement in decision making.

10 (e) PRIORITY.—In awarding grants under this sec-

11 tion, the Director shall give priority to applicants that pro-

12 pose to carry out new magnet school programs or signifi-

13 cantly revise existing magnet school programs.

14 (f) USE OF FUNDS.—

15 (1) IN GENERAL.—Grant funds made available

16 under this section may be used by an eligible local

17 educational agency or consortium of such agencies—

18 (A) for planning and promotional activities

19 directly related to the development, expansion,

20 continuation, or enhancement of academic pro-

21 grams and services offered at magnet schools;

22 (B) for the acquisition of books, materials,

23 and equipment (including computers), and the

24 maintenance and operation of materials, equip-

1           ment, and computers, necessary to conduct pro-  
2           grams in magnet schools;

3           (C) for the compensation, or subsidization  
4           of the compensation, of elementary school and  
5           secondary school teachers who are highly quali-  
6           fied, and instructional staff where applicable,  
7           who are necessary to conduct programs in mag-  
8           net schools;

9           (D) for activities, which may include pro-  
10          fessional development, that will build the capac-  
11          ity of the eligible local educational agency, or  
12          consortium of such agencies, to operate magnet  
13          school programs once the grant period has  
14          ended;

15          (E) to enable the eligible local educational  
16          agency, or consortium of such agencies, to have  
17          more flexibility in the administration of a mag-  
18          net school program in order to serve students  
19          attending a school who are not enrolled in a  
20          magnet school program; and

21          (F) to enable the eligible local educational  
22          agency, or consortium of such agencies, to have  
23          flexibility in designing magnet schools for stu-  
24          dents in all elementary school and secondary  
25          school grades.

1           (2) SPECIAL RULE.—Grant funds under this  
 2           section may be used for activities described in para-  
 3           graphs (2) and (3) of subsection (a) only if the ac-  
 4           tivities are directly related to improving—

5                   (A) student academic achievement based  
 6                   on the State’s challenging academic content  
 7                   standards and student academic achievement  
 8                   standards; or

9                   (B) student skills in or knowledge of math-  
 10                  ematics, science, and technology as well as  
 11                  other core academic subjects.

12          (g) PROHIBITION.—Grants under this section may  
 13          not be used for transportation or any activity that does  
 14          not augment academic improvement.

15          (h) LIMITATION.—

16                  (1) DURATION OF AWARDS.—A grant under  
 17                  this section shall be awarded for a period that shall  
 18                  not exceed 3 fiscal years.

19                  (2) LIMITATION ON PLANNING FUNDS.—An eli-  
 20                  gible local educational agency, or consortium of  
 21                  agencies, may expend for planning (professional de-  
 22                  velopment shall not be considered to be planning for  
 23                  the purposes of this subsection) not more than 50  
 24                  percent of the grant funds received under this sec-  
 25                  tion for the first year of the program and not more

1       than 15 percent of such funds for each of the second  
2       and third such years.

3           (3) AMOUNT.—No eligible local educational  
4       agency, or consortium of such agencies, awarded a  
5       grant under this section shall receive more than  
6       \$4,000,000 under this section for any one fiscal  
7       year.

8           (4) TIMING.—To the extent practicable, the  
9       Secretary shall award grants for any fiscal year  
10      under this section not later than July 1 of the appli-  
11      cable fiscal year.

12      (i) EVALUATIONS.—

13           (1) RESERVATION.—The Director may reserve  
14      not more than 2 percent of the funds appropriated  
15      to carry out this section for any fiscal year to carry  
16      out evaluations, provide technical assistance, and  
17      carry out dissemination projects with respect to  
18      magnet school programs assisted under this section.

19           (2) CONTENTS.—Each evaluation described in  
20      paragraph (1) at a minimum shall address—

21           (A) how and the extent to which magnet  
22      school programs lead to educational quality and  
23      improvement;

1 (B) the extent to which magnet school pro-  
2 grams enhance student access to high quality  
3 education; and

4 (C) the extent to which magnet school pro-  
5 grams differ from other school programs in  
6 terms of the organizational characteristics and  
7 resource allocation of such magnet school pro-  
8 grams.

9 **SEC. 203. INNOVATION-BASED EXPERIENTIAL LEARNING.**

10 (a) PILOT PROGRAM.—

11 (1) PROGRAM AUTHORIZED.—The Director of  
12 the National Science Foundation shall award grants  
13 to local educational agencies to enable the local edu-  
14 cational agencies to implement innovation-based ex-  
15 periential learning in a total of 500 elementary  
16 schools or middle schools in the United States.

17 (2) APPLICATION.—A local educational agency  
18 desiring a grant under this section shall submit an  
19 application at such time, in such manner, and ac-  
20 companied by such information as the Director of  
21 the National Science Foundation may require.

22 (b) AUTHORIZATION OF APPROPRIATIONS.—There  
23 are authorized to be appropriated to carry out this section  
24 \$10,000,000 for fiscal year 2007 and \$20,000,000 for  
25 each of the fiscal years 2008 and 2009.

1 **TITLE III—TEACHER TRAINING**  
 2 **AND PROFESSIONAL DEVELOPMENT**  
 3 **OPMENT**

4 **SEC. 301. BACCALAUREATE DEGREES IN MATHEMATICS**  
 5 **AND SCIENCE WITH TEACHER CERTIFI-**  
 6 **CATION.**

7 (a) DEFINITIONS.—Unless otherwise specified in this  
 8 section, the terms used in this section have the meanings  
 9 given the terms in section 9101 of the Elementary and  
 10 Secondary Education Act of 1965 (20 U.S.C. 7801).

11 (b) GRANTS AUTHORIZED.—From the amounts au-  
 12 thorized under subsection (h), the Secretary shall award  
 13 grants to eligible recipients to enable the eligible recipients  
 14 to provide integrated courses of study in mathematics,  
 15 science, or engineering and teacher education, that lead  
 16 to a baccalaureate degree in mathematics, science, or engi-  
 17 neering with concurrent teacher certification.

18 (c) DEFINITION OF ELIGIBLE RECIPIENT.—In this  
 19 section, the term “eligible recipient” means any depart-  
 20 ment of mathematics, science, or engineering of an institu-  
 21 tion of higher education.

22 (d) AWARD AND DURATION.—

23 (1) AWARD.—The Secretary shall award a  
 24 grant under this section to each eligible recipient  
 25 that collaborates with a teacher preparation program

1 at an institution of higher education to develop un-  
2 dergraduate degrees in mathematics, science, or en-  
3 gineering with pedagogy education and teacher cer-  
4 tification.

5 (2) DURATION.—The Secretary shall award a  
6 grant under this section to each eligible recipient in  
7 an amount that is not more than \$1,000,000 per  
8 year for a period of 5 years.

9 (e) MATCHING REQUIREMENT.—Each eligible recipi-  
10 ent receiving a grant under this section shall provide, from  
11 non-Federal sources (provided in cash or in kind), to carry  
12 out the activities supported by the grant, an amount that  
13 is not less than 25 percent of the amount of the grant  
14 for the first year of the grant, not less than 35 percent  
15 of the amount of the grant for the second year of the  
16 grant, and not less than 50 percent of the amount of the  
17 grant for each succeeding fiscal year of the grant.

18 (f) APPLICATION.—

19 (1) IN GENERAL.—Each eligible recipient desir-  
20 ing a grant under this section shall submit an appli-  
21 cation to the Secretary at such time, in such man-  
22 ner, and accompanied by such information as the  
23 Secretary may require.

24 (2) CONTENTS.—Each application submitted  
25 pursuant to paragraph (1) shall include—

1 (A) a description of how the eligible recipi-  
2 ent will use grant funds to develop and admin-  
3 ister undergraduate degrees in mathematics,  
4 science, or engineering with pedagogy education  
5 and teacher certification, including a descrip-  
6 tion of proposed high-quality research and lab-  
7 oratory experiences that will be available to stu-  
8 dents;

9 (B) a description of how the mathematics,  
10 science, or engineering departments will coordi-  
11 nate with a teacher preparation program to  
12 carry out the activities authorized under this  
13 section;

14 (C) a resource assessment that describes  
15 the resources available to the eligible recipient,  
16 the intended use of the grant funds, and the  
17 commitment of the resources of the eligible re-  
18 cipient to the activities assisted under this sec-  
19 tion, including financial support, faculty partici-  
20 pation, time commitments, and continuation of  
21 the activities assisted under the grant when the  
22 grant period ends;

23 (D) an evaluation plan, including measur-  
24 able objectives and benchmarks for—

25 (i) improving student retention;



1 (ii) increasing the percentage of high-  
 2 ly qualified mathematics and science teach-  
 3 ers; and

4 (iii) improving kindergarten through  
 5 grade 12 student academic performance in  
 6 mathematics and science;

7 (E) a description of the activities the eligi-  
 8 ble recipient will conduct to ensure graduates of  
 9 the program keep informed of the latest devel-  
 10 opments in the respective fields;

11 (F) a description of how the eligible recipi-  
 12 ent will work with local educational agencies in  
 13 the area in which the eligible recipient is lo-  
 14 cated and, to the extent practicable, with local  
 15 educational agencies where graduates of the  
 16 program authorized under this section are em-  
 17 ployed, to ensure that the activities required  
 18 under subsection (g)(3) are carried out; and

19 (G) a description of efforts to encourage  
 20 applications to the program from underrep-  
 21 resented groups, including women and minority  
 22 groups.

23 (g) AUTHORIZED ACTIVITIES.—An eligible recipient  
 24 shall use the funds received under this section—

1           (1) to develop and administer teacher education  
2           and certification programs with in-depth content  
3           education and subject-specific education in peda-  
4           gogy, leading to baccalaureate degrees in mathe-  
5           matics, science, or engineering with concurrent  
6           teacher certification;

7           (2) to offer high-quality research experiences  
8           and training in the use of educational technology;  
9           and

10          (3) to work with local educational agencies in  
11          the area in which the eligible recipient is located  
12          and, to the extent practicable, with local educational  
13          agencies where graduates of the program authorized  
14          under this section are employed, to support the new  
15          teachers during the initial years of teaching, which  
16          may include—

17                (A) promoting effective teaching skills;

18                (B) development of skills in educational  
19                interventions based on scientifically-based re-  
20                search;

21                (C) providing opportunities for high-quality  
22                teacher mentoring;

23                (D) providing opportunities for regular  
24                professional development;

1 (E) interdisciplinary collaboration among  
 2 exemplary teachers, faculty, researchers, and  
 3 other staff who prepare new teachers; and

4 (F) allowing time for joint lesson planning  
 5 and other constructive collaborative activities.

6 (h) AUTHORIZATION OF APPROPRIATIONS.—There  
 7 are authorized to be appropriated to carry out this section  
 8 \$30,000,000 for fiscal year 2007 and such sums as may  
 9 be necessary for each of the fiscal years 2008 through  
 10 2013.

11 **SEC. 302. TEACHERS PROFESSIONAL DEVELOPMENT INSTI-**  
 12 **TUTES.**

13 Title II of the Higher Education Act of 1965 (20  
 14 U.S.C. 1021 et seq.) is amended by adding at the end  
 15 the following:

16 **“PART C—TEACHERS PROFESSIONAL**  
 17 **DEVELOPMENT INSTITUTES**

18 **“SEC. 241. SHORT TITLE.**

19 “This part may be cited as the ‘Teachers Professional  
 20 Development Institutes Act’.

21 **“SEC. 242. PURPOSE.**

22 “The purpose of this part is to provide Federal assist-  
 23 ance to support the establishment and operation of Teach-  
 24 ers Professional Development Institutes for local edu-

1 cational agencies that serve significant low-income popu-  
 2 lations in States throughout the Nation—

3 “(1) to promote innovative and effective ap-  
 4 proaches to improving teacher quality through the  
 5 use of the Teacher Institute Model that encourages  
 6 collaboration between urban school teachers and uni-  
 7 versity faculty;

8 “(2) to improve student learning; and

9 “(3) to enhance the quality of teaching by  
 10 strengthening the subject matter mastery and peda-  
 11 gogical skills of current teachers through continuing  
 12 teacher preparation, particularly with respect to  
 13 mathematics, science, technology, and engineering.

14 **“SEC. 243. DEFINITIONS.**

15 “In this part:

16 “(1) **POVERTY LINE.**—The term ‘poverty line’  
 17 means the poverty line (as defined by the Office of  
 18 Management and Budget, and revised annually in  
 19 accordance with section 673(2) of the Community  
 20 Services Block Grant Act) applicable to a family of  
 21 the size involved.

22 “(2) **SIGNIFICANT LOW-INCOME POPULATION.**—  
 23 The term ‘significant low-income population’ means  
 24 a student population of which not less than 25 per-

1 cent are from families with incomes below the pov-  
 2 erty line.

3 “(3) STATE.—The term ‘State’ means each of  
 4 the several States of the United States, the District  
 5 of Columbia, and the Commonwealth of Puerto Rico.

6 “(4) TEACHERS PROFESSIONAL DEVELOPMENT  
 7 INSTITUTE.—The term ‘Teachers Professional De-  
 8 velopment Institute’ means a partnership or joint  
 9 venture between or among 1 or more institutions of  
 10 higher education, and 1 or more local educational  
 11 agencies serving a significant low-income population,  
 12 which partnership or joint venture—

13 “(A) is entered into for the purpose of im-  
 14 proving the quality of teaching and learning  
 15 through collaborative seminars designed to en-  
 16 hance both the subject matter and the peda-  
 17 gogical resources of the seminar participants,  
 18 particularly with respect to mathematics,  
 19 science, technology, and engineering; and

20 “(B) works in collaboration to determine  
 21 the direction and content of the collaborative  
 22 seminars.

23 **“SEC. 244. GRANT AUTHORITY.**

24 “(a) IN GENERAL.—The Secretary is authorized—

1           “(1) to award grants to Teachers Professional  
2   Development Institutes to encourage the establish-  
3   ment and operation of Teachers Professional Devel-  
4   opment Institutes where not less than 50 percent of  
5   collaborative seminars are targeted to the fields of  
6   mathematics, science, technology, and engineering;  
7   and

8           “(2) to provide technical assistance, either di-  
9   rectly or through existing Teachers Professional De-  
10   velopment Institutes, to assist local educational  
11   agencies and institutions of higher education in pre-  
12   paring to establish and in operating Teachers Pro-  
13   fessional Development Institutes.

14       “(b) SELECTION CRITERIA.—In selecting a Teachers  
15   Professional Development Institute for a grant under this  
16   part, the Secretary shall consider—

17           “(1) the extent to which the proposed Teachers  
18   Professional Development Institute will serve a com-  
19   munity with a significant low-income population;

20           “(2) the extent to which the proposed Teachers  
21   Professional Development Institute will follow the  
22   Understandings and Necessary Procedures that have  
23   been developed following the National Demonstra-  
24   tion Project;

1           “(3) the extent to which the local educational  
 2           agency participating in the proposed Teachers Pro-  
 3           fessional Development Institute has a high percent-  
 4           age of teachers who are unprepared or under pre-  
 5           pared to teach the core academic subjects the teach-  
 6           ers are assigned to teach, particularly in the areas  
 7           of mathematics, science, technology, and engineer-  
 8           ing; and

9           “(4) the extent to which the proposed Teachers  
 10          Professional Development Institute will receive a  
 11          level of support from the community and other  
 12          sources that will ensure the requisite long-term com-  
 13          mitment for the success of a Teachers Professional  
 14          Development Institute.

15          “(c) CONSULTATION.—

16               “(1) IN GENERAL.—In evaluating applications  
 17          under subsection (b), the Secretary may request the  
 18          advice and assistance of existing Teachers Profes-  
 19          sional Development Institutes.

20               “(2) STATE AGENCIES.—If the Secretary re-  
 21          ceives 2 or more applications for new Teachers Pro-  
 22          fessional Development Institutes that propose serv-  
 23          ing the same State, the Secretary shall consult with  
 24          the State educational agency regarding the applica-  
 25          tions.

1       “(d) FISCAL AGENT.—For the purpose of this part,  
 2 an institution of higher education participating in a  
 3 Teachers Professional Development Institute shall serve  
 4 as the fiscal agent for the receipt of grant funds under  
 5 this part.

6       “(e) LIMITATIONS.—A grant under this part—

7               “(1) shall be awarded for a period not to exceed  
 8       5 years; and

9               “(2) shall not exceed 50 percent of the total  
 10 costs of the eligible activities, as determined by the  
 11 Secretary.

12 **“SEC. 245. ELIGIBLE ACTIVITIES.**

13       “(a) IN GENERAL.—A Teachers Professional Devel-  
 14 opment Institute that receives a grant under this part may  
 15 use the grant funds—

16               “(1) for the planning and development of appli-  
 17 cations for the establishment of Teachers Profes-  
 18 sional Development Institutes;

19               “(2) to provide assistance to existing Teachers  
 20 Professional Development Institutes established dur-  
 21 ing the National Demonstration Project to enable  
 22 the Teachers Professional Development Institutes—

23                       “(A) to further develop existing Teachers  
 24 Professional Development Institutes; or



1                   “(B) to support the planning and develop-  
2                   ment of applications for new Teachers Profes-  
3                   sional Development Institutes;

4                   “(3) for the salary and necessary expenses of a  
5                   full-time director to plan and manage such Teachers  
6                   Professional Development Institute and to act as li-  
7                   aision between the participating local educational  
8                   agency and institution of higher education;

9                   “(4) to provide staff, equipment, and supplies,  
10                  and to pay other operating expenses for the develop-  
11                  ment and maintenance of Teachers Professional De-  
12                  velopment Institutes;

13                  “(5) to provide stipends for teachers partici-  
14                  pating in collaborative seminars in the sciences and  
15                  humanities, and to provide remuneration for those  
16                  members of the higher education faculty who lead  
17                  the seminars; and

18                  “(6) to provide for the dissemination through  
19                  print and electronic means of curriculum units pre-  
20                  pared in conjunction with Teachers Professional De-  
21                  velopment Institutes seminars.

22                  “(b) TECHNICAL ASSISTANCE.—The Secretary may  
23                  use not more than 25 percent of the funds appropriated  
24                  to carry out this part to provide technical assistance to  
25                  facilitate the establishment and operation of Teachers

1 Professional Development Institutes. For the purpose of  
 2 this subsection, the Secretary may contract with existing  
 3 Teachers Professional Development Institutes to provide  
 4 all or a part of the technical assistance under this sub-  
 5 section.

6 **“SEC. 246. APPLICATION, APPROVAL, AND AGREEMENT.**

7 “(a) IN GENERAL.—To receive a grant under this  
 8 part, a Teachers Professional Development Institute shall  
 9 submit an application to the Secretary that—

10 “(1) meets the requirement of this part and any  
 11 regulations under this part;

12 “(2) includes a description of how the Teachers  
 13 Professional Development Institute intends to use  
 14 funds provided under the grant;

15 “(3) includes such information as the Secretary  
 16 may require to apply the criteria described in section  
 17 244(b);

18 “(4) includes measurable objectives for the use  
 19 of the funds provided under the grant; and

20 “(5) contains such other information and assur-  
 21 ances as the Secretary may require.

22 “(b) APPROVAL.—The Secretary shall—

23 “(1) promptly evaluate an application received  
 24 for a grant under this part; and

1           “(2) notify the applicant within 90 days of the  
2           receipt of a completed application of the Secretary’s  
3           approval or disapproval of the application.

4           “(c) AGREEMENT.—Upon approval of an application,  
5           the Secretary and the Teachers Professional Development  
6           Institute shall enter into a comprehensive agreement cov-  
7           ering the entire period of the grant.

8           **“SEC. 247. REPORTS AND EVALUATIONS.**

9           “(a) REPORT.—Each Teachers Professional Develop-  
10          ment Institute receiving a grant under this part shall re-  
11          port annually on the progress of the Teachers Professional  
12          Development Institute in achieving the purpose of this  
13          part and the purposes of the grant.

14          “(b) EVALUATION AND DISSEMINATION.—

15                 “(1) EVALUATION.—The Secretary shall evalu-  
16          ate the activities funded under this part and submit  
17          an annual report regarding the activities to the  
18          Committee on Health, Education, Labor, and Pen-  
19          sions of the Senate and the Committee on Education  
20          and the Workforce of the House of Representatives.

21                 “(2) DISSEMINATION.—The Secretary shall  
22          broadly disseminate successful practices developed  
23          by Teachers Professional Development Institutes.

24          “(c) REVOCATION.—If the Secretary determines that  
25          a Teachers Professional Development Institute is not

1 making substantial progress in achieving the purpose of  
 2 this part and the purposes of the grant by the end of the  
 3 second year of the grant under this part, the Secretary  
 4 may take appropriate action, including revocation of fur-  
 5 ther payments under the grant, to ensure that the funds  
 6 available under this part are used in the most effective  
 7 manner.

8 **“SEC. 248. AUTHORIZATION OF APPROPRIATIONS.**

9 “There are authorized to be appropriated to carry out  
 10 this part—

11 “(1) \$4,000,000 for fiscal year 2007;

12 “(2) \$5,000,000 for fiscal year 2008;

13 “(3) \$6,000,000 for fiscal year 2009;

14 “(4) \$7,000,000 for fiscal year 2010; and

15 “(5) \$8,000,000 for fiscal year 2011.”.

16 **TITLE IV—STEM EDUCATION**  
 17 **AND RESEARCH**

18 **SEC. 401. DEFINITIONS.**

19 In this title:

20 (1) INSTITUTION OF HIGHER EDUCATION.—The  
 21 term “institution of higher education” has the  
 22 meaning given the term in section 101(a) of the  
 23 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

24 (2) PROFESSIONAL SCIENCE MASTER’S DEGREE  
 25 PROGRAM.—The term “professional science master’s

degree program” means a graduate degree program in science and mathematics that extends science training to strategic planning and business management and focuses on multidisciplinary specialties such as business and information technology (IT), biology and IT (bioinformatics), and computational chemistry.

(3) SERVICE SCIENCE.—The term “service science” means curriculums, research programs, and training regimens, including service sciences, management, and engineering (SSME) programs, that exist or that are being developed to teach individuals to apply technology, organizational process management, and industry-specific knowledge to solve complex problems.

(4) SSME.—The term “SSME” means the discipline known as service sciences, management, and engineering that—

(A) applies scientific, engineering, and management disciplines to tasks that one organization performs beneficially for others, generally as part of the services sector of the economy; and

(B) integrates computer science, operations research, industrial engineering, business strat-

1           egy, management sciences, and social and legal  
 2           sciences, in order to encourage innovation in  
 3           how organizations create value for customers  
 4           and shareholders that could not be achieved  
 5           through such disciplines working in isolation.

6 **SEC. 402. GRADUATE FELLOWSHIPS AND GRADUATE**  
 7 **TRAINEESHIPS.**

8           (a) GRADUATE RESEARCH FELLOWSHIP PRO-  
 9 GRAM.—

10           (1) IN GENERAL.—During the 5-year period be-  
 11 ginning on the date of the enactment of this Act, the  
 12 Director of the National Science Foundation shall  
 13 expand the Graduate Research Fellowship Program  
 14 of the Foundation so that an additional 1250 fellow-  
 15 ships are awarded to United States citizens under  
 16 such Program during such period.

17           (2) EXTENSION OF FELLOWSHIP PERIOD.—The  
 18 Director of the National Science Foundation is au-  
 19 thorized to award fellowships under the Graduate  
 20 Research Fellowship Program for a period of 5  
 21 years, subject to funds being made available for such  
 22 purpose.

23           (3) AUTHORIZATION OF APPROPRIATIONS.—In  
 24 addition to any other amounts authorized to be ap-  
 25 propriated, there are authorized to be appropriated

1       \$51,000,000 for each of the fiscal years 2007  
2       through 2011 to provide an additional 250 fellow-  
3       ships under the Graduate Research Fellowship Pro-  
4       gram during each such fiscal year.

5       (b) INTEGRATIVE GRADUATE EDUCATION AND RE-  
6       SEARCH TRAINEESHIP PROGRAM.—

7           (1) IN GENERAL.—During the 5-year period be-  
8       ginning on the date of the enactment of this Act, the  
9       Director of the National Science Foundation shall  
10      expand the Integrative Graduate Education and Re-  
11      search Traineeship program of the Foundation so  
12      that an additional 1,250 United States citizens are  
13      awarded grants under such program during such pe-  
14      riod.

15          (2) AUTHORIZATION OF APPROPRIATIONS.—In  
16      addition to any other amounts authorized to be ap-  
17      propriated, there are authorized to be appropriated  
18      \$51,000,000 for each of the fiscal years 2007  
19      through 2011 to provide grants to an additional 250  
20      individuals under the Integrative Graduate Edu-  
21      cation and Research Traineeship program during  
22      each such fiscal year.

23   **SEC. 403. PROFESSIONAL SCIENCE MASTER'S DEGREE PRO-**  
24       **GRAMS.**

25      (a) CLEARINGHOUSE.—

1           (1) DEVELOPMENT.—From amounts appro-  
2           priated under subsection (c), the Director of the Na-  
3           tional Science Foundation shall establish a clearing-  
4           house, in collaboration with 4-year institutions of  
5           higher education, industries, and Federal agencies  
6           that employ science-trained personnel, to share pro-  
7           gram elements used in successful professional  
8           science master's degree programs.

9           (2) AVAILABILITY.—The Director of the Na-  
10          tional Science Foundation shall make the clearing-  
11          house of program elements developed under para-  
12          graph (1) available to institutions of higher edu-  
13          cation that are developing professional science mas-  
14          ter's degree programs.

15         (b) PILOT PROGRAMS.—

16                 (1) PROGRAM AUTHORIZED.—From amounts  
17                 appropriated under subsection (c), the Director of  
18                 the National Science Foundation shall award grants  
19                 for pilot programs to 4-year institutions of higher  
20                 education to facilitate the institutions' creation or  
21                 improvement of professional science master's degree  
22                 programs.

23                 (2) APPLICATION.—A 4-year institution of  
24                 higher education desiring a grant under this section  
25                 shall submit an application at such time, in such



1 manner, and accompanied by such information as  
2 the Director of the National Science Foundation  
3 may require. The application shall include—

4 (A) a description of the professional  
5 science master's degree program that the insti-  
6 tution of higher education will implement;

7 (B) the amount of funding from non-Fed-  
8 eral sources, including from private industries,  
9 that the institution of higher education shall  
10 use to support the professional science master's  
11 degree program; and

12 (C) an assurance that the institution of  
13 higher education shall encourage students in  
14 the professional science master's degree pro-  
15 gram to apply for all forms of Federal assist-  
16 ance available to such students, including appli-  
17 cable graduate fellowships and student financial  
18 assistance under title IV of the Higher Edu-  
19 cation Act of 1965 (20 U.S.C. 1070 et seq.).

20 (3) PREFERENCE FOR ALTERNATIVE FUNDING  
21 SOURCES.—The Director of the National Science  
22 Foundation shall give preference in making awards  
23 to 4-year institutions of higher education seeking  
24 Federal funding to support pilot professional science  
25 master's degree programs, to those applicants that

1 secure more than  $\frac{2}{3}$  of the funding for such profes-  
2 sional science master's degree programs from  
3 sources other than the Federal Government.

4 (4) NUMBER OF GRANTS; TIME PERIOD OF  
5 GRANTS.—

6 (A) NUMBER OF GRANTS.—Subject to the  
7 availability of appropriated funds, the Director  
8 of the National Science Foundation shall award  
9 grants under paragraph (1) to a maximum of  
10 200 4-year institutions of higher education.

11 (B) TIME PERIOD OF GRANTS.—Grants  
12 awarded under this section shall be for one 3-  
13 year term. Grants may be renewed only once  
14 for a maximum of 2 additional years.

15 (5) EVALUATION AND REPORTS.—

16 (A) DEVELOPMENT OF PERFORMANCE  
17 BENCHMARKS.—Prior to the start of the grant  
18 program, the National Science Foundation, in  
19 collaboration with 4-year institutions of higher  
20 education, shall develop performance bench-  
21 marks to evaluate the pilot programs assisted  
22 by grants under this section.

23 (B) EVALUATION.—For each year of the  
24 grant period, the Director of the National  
25 Science Foundation, in consultation with 4-year

1 institutions of higher education, industry, and  
2 Federal agencies that employ science-trained  
3 personnel, shall complete an evaluation of each  
4 pilot program assisted by grants under this sec-  
5 tion. Any pilot program that fails to satisfy the  
6 performance benchmarks developed under sub-  
7 paragraph (A) shall not be eligible for further  
8 funding.

9 (C) REPORT.—Not later than 180 days  
10 after the completion of an evaluation described  
11 in subparagraph (B), the Director of the Na-  
12 tional Science Foundation, in consultation with  
13 industries and Federal agencies that employ  
14 science-trained personnel, shall submit a report  
15 to Congress that includes—

16 (i) the results of the evaluation de-  
17 scribed in subparagraph (B); and

18 (ii) recommendations for administra-  
19 tive and legislative action that could opti-  
20 mize the effectiveness of the pilot pro-  
21 grams, as the Director determines to be  
22 appropriate.

23 (c) AUTHORIZATION OF APPROPRIATIONS.—There  
24 are authorized to be appropriated to carry out this section

1 \$20,000,000 for fiscal year 2007 and such sums as may  
 2 be necessary for each succeeding fiscal year.

3 **SEC. 404. INCREASED SUPPORT FOR SCIENCE EDUCATION**  
 4 **THROUGH THE NATIONAL SCIENCE FOUNDA-**  
 5 **TION.**

6 There are authorized to be appropriated to carry out  
 7 the science, mathematics, engineering, and technology tal-  
 8 ent expansion program under section 8(7) of the National  
 9 Science Foundation Authorization Act of 2002 (Public  
 10 Law 107–368, 116 Stat. 3042) the following amounts:

- 11 (1) For fiscal year 2007, \$35,000,000.
- 12 (2) For fiscal year 2008, \$50,000,000.
- 13 (3) For fiscal year 2009, \$100,000,000.
- 14 (4) For fiscal year 2010, \$150,000,000.

15 **SEC. 405. A NATIONAL COMMITMENT TO BASIC RESEARCH.**

16 (a) **PLAN FOR INCREASED RESEARCH.**—Not later  
 17 than 180 days after the date of the enactment of this Act,  
 18 the Director of the National Science Foundation shall sub-  
 19 mit to Congress a comprehensive, multiyear plan that de-  
 20 scribes how the funds authorized in subsection (b) shall  
 21 be used. Such plan shall be developed with a focus on uti-  
 22 lizing basic research in physical science and engineering  
 23 to optimize the United States economy as a global compet-  
 24 itor and leader in productive innovation.

1 (b) INCREASED FUNDING FOR NATIONAL SCIENCE  
 2 FOUNDATION.—There are authorized to be appropriated  
 3 to the National Science Foundation for the purpose of  
 4 doubling research funding the following amounts:

- 5 (1) \$6,440,000,000 for fiscal year 2007.
- 6 (2) \$7,280,000,000 for fiscal year 2008.
- 7 (3) \$8,120,000,000 for fiscal year 2009.
- 8 (4) \$8,960,000,000 for fiscal year 2010.
- 9 (5) \$9,800,000,000 for fiscal year 2011.

10 (c) RECOMMENDATIONS FOR RESEARCH AND DEVEL-  
 11 OPMENT FUNDING.—Not later than 1 year after the date  
 12 of the enactment of this Act, the Director of the Office  
 13 of Science and Technology Policy shall evaluate and, as  
 14 appropriate, submit to Congress recommendations for an  
 15 increase in funding for research and development in phys-  
 16 ical sciences and engineering in consultation with agencies  
 17 and departments of the United States with significant re-  
 18 search and development budgets.

19 **SEC. 406. STUDY ON SERVICE SCIENCE.**

20 (a) SENSE OF CONGRESS.—It is the sense of Con-  
 21 gress that, in order to strengthen the competitiveness of  
 22 United States enterprises and institutions and to prepare  
 23 the people of the United States for high-wage, high-skill  
 24 employment, the Federal Government should better under-

1 stand and respond strategically to the emerging vocation  
2 and learning discipline known as service science.

3 (b) STUDY.—Not later than 270 days after the date  
4 of the enactment of this Act, the Director of the National  
5 Science Foundation shall conduct a study and report to  
6 Congress regarding how the Federal Government should  
7 support, through research, education, and training, the  
8 new discipline of service science.

9 (c) OUTSIDE RESOURCES.—In conducting the study  
10 under subsection (b), the Director of the National Science  
11 Foundation shall consult with leaders from 2- and 4-year  
12 institutions of higher education, leaders from corporations,  
13 and other relevant parties.

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